

ABSTRACT OF THE DISCLOSURE

According to a first aspect of the preferred embodiment, a three-axis sensor assembly for use in an elastomeric material includes a first pair of sensors disposed along a first pair of respective axes that intersect, the first sensors being adapted to detect a force in a first direction. In addition, the sensor assembly includes a second pair of sensors disposed along a second pair of respective axes that intersect, the second sensors detecting a force in a second direction generally orthogonal to the first direction. Furthermore, in the assembly, the force measured in the first direction is equal to the difference between the outputs of the first sensors, and the force measured in the second direction is equal to the difference between the outputs of said second sensors. According to another aspect of the preferred embodiment, the sum of the outputs of the first sensors and the second sensors equals a force in a third direction orthogonal to the first and second directions. In another aspect of the preferred embodiment, the first pair of sensors are disposed on first opposed faces of a pyramid-shaped body, and the second pair of sensors are disposed on second opposed faces of the pyramid-shaped body. In addition, the elastomeric material can be a vehicle tire, and the tire may include a plurality of the sensor assemblies disposed about its perimeter in mutually spaced relationship.

09724655